

WHAT IS CLAIMED IS:

1. A liquid crystal sealing agent composition that is a one-component light and heat-curable resin composition comprising:

(1) a solid epoxy resin having a softening temperature by the ring and ball method of 40°C or above;

(2) an acrylate monomer and/or a methacrylate monomer, or an oligomer thereof;

(3) a thermoplastic polymer having a softening temperature by the ring and ball method of 50 to 120°C, the thermoplastic polymer being obtained by copolymerizing an acrylate monomer and/or a methacrylate monomer with a monomer copolymerizable therewith;

(4) a light-activated radical polymerization initiator; and

(5) a latent epoxy curing agent.

2. The liquid crystal sealing agent composition according to claim 1, further containing (6) a partially esterified epoxy resin obtained by reacting an epoxy resin with a compound having at least one methacryloyl or acryloyl group and at least one carboxyl group in the molecule.

3. The liquid crystal sealing agent composition according to claim 1 or 2, wherein the solid epoxy resin (1) ranges in number-average molecular weight from 500 to 2000.

5 4. The liquid crystal sealing agent composition according to any one of claims 1 to 3, wherein the solid epoxy resin (1) is contained in an amount of 5 to 40 parts by weight in 100 parts by weight of the liquid crystal sealing agent composition.

10 5. The liquid crystal sealing agent composition according to any one of claims 1 to 4, wherein the acrylate monomer and/or the methacrylate monomer, or the oligomer thereof (2) ranges in number-average molecular weight from 250
15 to 2000 and has a Fedors theoretical solubility parameter (sp value) in the range of 10.0 to 13.0 (cal/cm³)^{1/2}.

6. The liquid crystal sealing agent composition according to any one of claims 1 to 5, wherein the solid epoxy
20 resin (1) is contained in an amount of 20 to less than 200 parts by weight per 100 parts by weight of the acrylate monomer and/or the methacrylate monomer, or the oligomer thereof (2).

7. The liquid crystal sealing agent composition

according to any one of claims 1 to 6, wherein the thermoplastic polymer (3) has an average particle diameter in the range of 0.05 to 5 μm .

5 8. The liquid crystal sealing agent composition according to any one of claims 1 to 7, wherein the thermoplastic polymer (3) comprises substantially spherical particles having a core-shell structure, and a core layer of the core-shell structure comprises an elastomer obtained by
10 copolymerizing an acrylate monomer and/or a methacrylate monomer with a monomer copolymerizable therewith.

 9. The liquid crystal sealing agent composition according to any one of claims 1 to 8, wherein the thermoplastic
15 polymer (3) is contained in an amount of 2 to 40 parts by weight in 100 parts by weight of the liquid crystal sealing agent composition.

 10. The liquid crystal sealing agent composition
20 according to any one of claims 1 to 9, wherein the latent epoxy curing agent (5) is an amine-based latent curing agent and has a melting point or a ring and ball method softening temperature of 100°C or above.

11. The liquid crystal sealing agent composition according to any one of claims 1 to 10, wherein the solid epoxy resin (1) and the acrylate monomer and/or the methacrylate monomer, or the oligomer thereof (2) are contained in a total amount of 160 to 800 parts by weight per 100 parts by weight of the partially esterified epoxy resin (6).

12. The liquid crystal sealing agent composition according to any one of claims 1 to 11, having:

10 (a) a glass transition temperature (T_g) in the range of 70 to 120°C as measured after cured by 1000-3000 mJ light irradiation (determined with respect to a 100 μ m thick cured product based on its dynamic viscoelasticity obtained by a tensile mode with a heating rate of 5°C/min and a frequency
15 of 10 Hz); and

(b) a gel fraction of 75% by weight or above as measured after heat cured at 110 to 140°C for 1 hour (determined with respect to 1 g of a 100 μ m thick cured product by 3-hour Soxhlet extraction using methanol).

20

13. A method of manufacturing a liquid crystal display panel, which method comprises performing one drop fill in which the liquid crystal sealing agent composition of any one of claims 1 to 12 is light cured and is thereafter heat cured.

14. A liquid crystal display panel obtained by the method of claim 13.